

# Exercise Handbook

March 30, 2018

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Derivatives and Hedging Techniques

## Exercise XVII

Consider the following:

$S_{\frac{C_1}{C_2}}$	1.25
$r_{1yr-C_1}$	0.03
$r_{1yr-C_2}$	0.04

- ▶ Calculate the theoretical price of a one year forward contract.
- ▶ What would you do if the forward price was quoted at  $\frac{C_1}{C_2}$  1.26 in the market place? Where would you borrow? Lend? Calculate the gain on a  $C_1$  100 million arbitrage transaction.
- ▶ What would you do if the future price was quoted at  $\frac{C_1}{C_2}$  1.20 in the market place? Where would you borrow? Lend? Calculate the gain on a  $C_2$  100 million arbitrage transaction.



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## Exercise XVIII

The following exchange rates and one-year interest rates exist.

	<b>Bid</b>	<b>Ask</b>
$S_{\frac{A}{B}}$	1.12	1.13
$F_{\frac{A}{B}}$	1.12	1.13

	<b>Deposit</b>	<b>Loan</b>
$r_A$	0.06	0.09
$r_B$	0.07	0.1

You have 100,000 A to invest for one year. Would you benefit from engaging in covered interest arbitrage?



## Exercise XX

An investor sells 1 share MPS short at 70 USD and simultaneously writes one MPS 70 put at 3 USD. What is the maximum gain in this strategy? **Do not forget to justify your claims.**

1. 73 USD
2. 70 USD
3. 67 USD
4. 3 USD

What is the maximum loss?

1. Unlimited
2. 70 USD
3. 63 USD
4. 3 USD



## Exercise XXI

An investor has sold 1 share of FBN stock short at 62 USD and buys one FBN Jan 65 call at 2 USD. If FBN stock rises to 70 USD and the investor exercises the call, what is the gain or loss in this position? **Do not forget to justify your claims.**

1. Unlimited
2. 2 USD/share
3. 5 USD/share
4. 8 USD/share



## Exercise XXII

Suppose that an investor has sold 100 shares of MNO stock short at 75 USD/share and feels confident that the stock's price will fall in the market in the near future. To protect against a sudden rise in price, which of the following strategies would you recommend? **Do not forget to justify your claims.**

1. Sell a MNO put
2. Buy a MNO put
3. Sell a MNO call
4. Buy a MNO call





## Exercise XXIII

For each pair of conditions, which one refers to futures?  
Which one to forwards? **Support your claims with concise explanations.**

- ▶ Standardized-Tailor made
- ▶ Mark-to-market risk-Settlement risk
- ▶ Fixed maturities-Several available maturities
- ▶ Illiquid secondary market-Liquid secondary market
- ▶ OTC traded-Traded on regulated markets
- ▶ For hedgers-For speculators

